

The AI Playbook

Mastering the Rare Art of Machine Learning Deployment

By Eric Siegel

Notes for the INTRODUCTION

These notes include references, plus resources for further learning. For all the chapters' notes as well as information about the book in general, access the book's website at www.bizML.com.

The Innovator's Paradox was coined by Professors Jeff Dyer, Nathan Furr, and Mike Hendron. <https://sloanreview.mit.edu/article/overcoming-the-innovators-paradox/>

JACK LEVIS / UPS STORY (Most of the story came from direct interviews with Jack Levis):

Thematically related to Jack Levis' story, although more focused on training sales teams rather than pulling off a singular internal sale:

"How to Sell New Products", by Thomas Steenburgh and Michael Ahearne

<https://hbr.org/2018/11/how-to-sell-new-products>

Jack Levis' Ted Talk:

The hardest step in innovation? Looking foolish in front of the crowd

<https://www.youtube.com/watch?v=IBS-FVsUN4Y>

'ORION' delivers success for UPS

<https://pubsonline.informs.org/doi/10.1287/orms.2016.03.10/full/>

Keynote presentation by Jack Levis: UPS Analytics – The Road to Optimization (2014)

<https://www.predictiveanalyticsworld.com/machinelearningtimes/video-ups-analytics-road-optimization/4506/>

Jack Levis keynote slides (2017):

The Road to Optimization

<https://www.slideshare.net/RMEvents/1310-keynote-leviusing-his-laptop>

Wise Practitioner – Predictive Analytics Interview Series: Jack Levis at UPS

2014:

<https://www.predictiveanalyticsworld.com/machinelearningtimes/wise-practitioner-predictive-analytics-interview-series-jack-levis-ups/3770/>

2015:

<https://www.predictiveanalyticsworld.com/machinelearningtimes/wise-practitioner-predictive-analytics-interview-series-jack-levis-of-ups-04272015/5173/>

2017:

<https://www.predictiveanalyticsworld.com/machinelearningtimes/wise-practitioner-predictive-analytics-interview-series-jack-levi-ups/8699/>

How UPS Uses Analytics to Drive Down Costs

<https://www.predictiveanalyticsworld.com/machinelearningtimes/ups-uses-analytics-drive-costs-doesnt-call-big-data/4375/>

At UPS, the Algorithm Is the Driver

<https://www.wsj.com/articles/at-ups-the-algorithm-is-the-driver-1424136536>

New package-flow technology not delivering at UPS

<https://www.computerworld.com/article/2568868/new-package-flow-technology-not-delivering-at-ups.html>

20 great ideas to steal in 2013

https://www.informationweek.com/it-leadership/20-great-ideas-to-steal-in-2013/d/d-id/1111315?page_number=2

How UPS Route Optimization Software (ORION) Helps Drivers Make On-Time Deliveries

<https://blog.route4me.com/ups-route-optimization-software-orion/>

UPS adds dynamic routing to ORION, saving 2-4 miles per driver

<https://www.supplychaindive.com/news/ups-orion-route-planning-analytics-data-logistics/601673/>

UPS Accelerates Use of Routing Optimization Software to Reduce 100 Million Miles Driven

<https://www.3blmedia.com/News/UPS-Accelerates-Use-Routing-Optimization-Software-Reduce-100-Million-Miles-Driven>

How UPS Augments Its Drivers' Intuition with Predictive Analytics

<https://www.predictiveanalyticsworld.com/machinelearningtimes/how-ups-augments-its-drivers-intuition-with-predictive-analytics-0617153/5563/>

The Road to Optimization - UPS's Analytics Success Story (webinar)

<https://www.brighttalk.com/webcast/14379/306419/the-road-to-optimization-upss-analytics-success-story>

In a 2017 Harvard Business Review article, MIT's Erik Brynjolfsson and Andrew McAfee called machine learning "the most important general-purpose technology of our era."

<https://hbr.org/2017/07/the-business-of-artificial-intelligence>

Lukas Beiwald quote from the podcast he hosts:

Gradient Dissent, podcast

Episode: James Cham — Investing in the Intersection of Business and Technology

<https://www.youtube.com/watch?v=T4LXx8Bs1kY>

Quote from Caroline Zaborowski:

What it takes to build enterprise-grade AI applications

<https://towardsdatascience.com/what-it-takes-to-build-enterprise-grade-ai-applications-8dac496e7880>

TWO OTHER CLOSELY-RELATED QUOTES:

"Machine learning drives our algorithms for demand forecasting, product search ranking, product and deals recommendations, merchandising placements, fraud detection, translations, and much more. Though less visible, much of the impact of machine learning will be of this type — quietly but meaningfully improving core operations."

- Jeff Bezos, in 2017 letter to Amazon shareholders

<https://www.businessinsider.com/read-amazon-ceo-jeff-bezos-2016-letter-to-shareholders-2017-4>

"Highly ambitious moon shots are less likely to be successful than 'low-hanging fruit' projects that enhance business processes."

Artificial Intelligence for the Real World

<https://hbr.org/2018/01/artificial-intelligence-for-the-real-world>

What Ever Happened to IBM's Watson?

<https://www.nytimes.com/2021/07/16/technology/what-happened-ibm-watson.html>

How IBM's Watson Went From the Future of Health Care to Sold Off for Parts

<https://slate.com/technology/2022/01/ibm-watson-health-failure-artificial-intelligence.html>

Machine Learning the Hard Way: IBM Watson's Fatal Misdiagnosis

https://www.theregister.com/2022/01/31/machine_learning_the_hard_way/

Seven Reasons You Need Predictive Analytics Today

<https://www.predictiveanalyticsworld.com/machinelearningtimes/seven-reasons-you-need-predictive-analytics-today/6730/>

AUTONOMOUS VEHICLES:

Quote from Chris Urmson:

The Costly Pursuit of Self-Driving Cars Continues On. And On. And On.

<https://www.nytimes.com/2021/05/24/technology/self-driving-cars-wait.html>

"L5 driving is 'about 20 years away... maybe even longer.'"

- Kai Fu Lee

<https://www.youtube.com/watch?v=UJe9WUn0qaM>

at 25:00

"It's, I would say, the engineering challenge of our generation. That's what's taking it so long,"

Mawakana said. "Safety takes time."

- Tekedra Mawakana, CEO of Waymo

Self-driving cars: The 21st-century trolley problem

<https://www.vox.com/recode/22700022/self-driving-autonomous-cars-trolley-problem-waymo-google-tesla>

'Peak hype': why the driverless car revolution has stalled

<https://www.theguardian.com/technology/2021/jan/03/peak-hype-driverless-car-revolution-uber-robotaxis-autonomous-vehicle>

Even After \$100 Billion, Self-Driving Cars Are Going Nowhere

<https://www.bloomberg.com/news/features/2022-10-06/even-after-100-billion-self-driving-cars-are-going-nowhere>

Will Tesla ever "Solve" Full Self Driving?

<https://garymarcus.substack.com/p/will-tesla-ever-solve-full-self-driving>

A wave of lawsuits argue that Tesla's self-driving software is dangerously overhyped.

<https://www.nytimes.com/2023/01/17/magazine/tesla-autopilot-self-driving-elon-musk.html>

Self-Driving Cars are Self-Driving Bullets

<https://themobilist.medium.com/self-driving-cars-self-driving-bullets-955dfd2c5150>

"This industry has a record with hype... we collectively do have a problem... We've made tremendous progress [decreasing hype] since the peak hype, but old habits do kinda die hard... Letting people down does not build trust; it erodes trust... This is much more subtle now than it was in 2016 (wherever you want to put the peak of the hype), but we're also still digging out of the 'trust hole' that that peak hype caused, the trough of disillusionment."

- Edward Niedermeyer Director Of Communications at Partners for Automated Vehicle Education Author, "Ludicrous: the Unvarnished Story of Tesla Motors" Autonocast podcast 11/4/2021 [25:00]

"Recruiting customers to test unproven technology is reckless. We urge Tesla, and any company that would consider following its lead, to prove its technology's safety under controlled conditions before putting the general public at risk. And can we stop calling a great driver assistance system "full self-driving"?"

- Andrew Ng ("The Batch" email newsletter 100721)

"That 'fake 'til you make it' culture [of Silicon Valley] is bleeding over into safety-critical technologies... There are people who really believe [full self-driving] is going to happen tomorrow... The psychology of wanting to believe that something 'magical' can happen is so strong that it makes people who should know better completely divorce themselves from reality."

- Professor Missy Cummings

On "Factually!" podcast, June 2021: "Why Self-Driving Cares Aren't Coming Any Time Soon"]

The author's thoughts on AI hype:

"The AI Hype Cycle Is Distracting Companies"

Eric Siegel, Harvard Business Review, June 2, 2023

SUMMARY OF ARTICLE: *Machine learning has an "AI" problem. With new breathtaking capabilities from generative AI released every several months — and AI hype escalating at an even higher rate — it's high time we differentiate most of today's practical ML projects from those research advances. This begins by correctly naming such projects: Call them "ML," not "AI." Including all ML initiatives under the "AI" umbrella oversells and misleads, contributing to a high failure rate for ML business deployments. For most ML projects, the term "AI" goes entirely too far — it alludes to human-level capabilities. In fact, when you unpack the meaning of "AI," you discover just how overblown a buzzword it is: If it doesn't mean artificial general intelligence, a grandiose goal for technology, then it just doesn't mean anything at all.*

<https://hbr.org/2023/06/the-ai-hype-cycle-is-distracting-companies>